



Norfolk DPW-Water Division

2006

PWS ID: #2208000

REPORT ON WATER QUALITY

This is Norfolk Department of Public Works' (DPW) annual report to you on water quality. The statistics in this report are based on testing done throughout 2006 and in prior years. We hope you will find it helpful to know the sources of your water and the process by which safe drinking water is delivered to your home.

Where Does My Water Come From?

Norfolk water is supplied from two gravel-packed wells that draw from the Charles River Watershed. The Gold Street Well, 2208000-01G, located near the intersection of Medway Street and Myrtle Street and the Spruce Road Well, 2208000-02G, located near Mirror Lake Avenue. Your water is delivered to your home through 55 miles of water main and stored in two 1.0 million gallon storage tanks. The Pondville Tank is located off Sharon Avenue, and the Weeber Tank is located off Meetinghouse Road behind Norfolk Town Hall.

In addition, the Norfolk DPW maintains permanent interconnections with the Town of Wrentham, the Wrentham Development Center, the Town of Franklin, and MCI Norfolk. Additional emergency interconnections are maintained with the Town of Walpole and the Town of Medfield.

Maintaining Water Quality

The Norfolk DPW continuously strives to produce the highest quality water possible to meet or surpass every water quality standard. We monitor both our sources and distribution system very closely. The standards we operate under were enacted by the U.S. Congress as the Safe Drinking Water Act in 1974 and were amended in 1986 and 1996.

In order to ensure tap water is safe to drink, the DEP and EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) and Massachusetts Department of Public Health regulations establish limits for contaminants in bottled water that must provide the same



Promote Water Conservation

The Norfolk DPW-Water Division recommends the installation of hose bibb type vacuum breakers on all outside spigots. This will protect you the home owner against the potential cross connection of your ordinary outside hose. For more information please feel free to contact the DPW

Meter Exchange Program

In an effort to better services our customers and track water usage the NDPW Water Division will begin a complete meter exchange program in the late summer and fall of 2007. This program will include the replacement of all water meters throughout the system and the installation of a state of the art fixed network meter reading system. The program will be implemented and managed by our contractor Mass Installation of Norwood, MA. All residents will receive notices in the mail concerning this program and it will be closely monitored by the Department of Public Works. Should you have any immediate questions or concerns, please feel free to contact the NDPW @ (508) 528-4990.

Water Treatment

In order to meet state and federal requirements for public drinking water, our source water receives treatment before it is supplied to our customers. The pH of the water is increased with potassium hydroxide to reduce its corrosiveness in household plumbing. Water from the Spruce Road Well is disinfected with a state-of-the-art UV (ultraviolet light) system; a chlorination system is available on an emergency basis. A polyphosphate is added to the Spruce Road well to sequester iron and manganese, as well as coat the water mains to assist with corrosion control. Aeration removes dissolved CO₂ thus raising pH and reducing radon. Testing throughout the water system has shown that this treatment has been effective at reducing lead and copper concentrations.

All chemicals used for corrosion control are approved for water treatment by one or more of the following organizations: National Sanitation Foundation (NSF International), or UL, both accredited by the American National Standards Institute (ANSI). Chemicals also have to meet performance standards established by the American Water Works Association.

Norfolk Department of Public Works Water Division

The Norfolk water system is operated and maintained by the Department of Public Works Water Division. If you have any questions about this report, please contact:

Remo R. Vito Jr., Director of Public Works at (508) 528-4990

Board of Public Works Members

Ed Melanson, Chairman
Harvey Nasuti, Vice Chairman
Ellen Friedman
Vida Holmes

**DRINKING
WATER
SUPPLY**



*Please conserve
and protect it!*

Opportunities to Participate

The Norfolk Department of Public Works encourages public participation. Effective July 1, 2007, the board of public works will end it's three years of assistance to the Department of Public Works. We would like to thank the board and it's present and former members for all their hard work and dedication to the Town of Norfolk. The Board of Selectman will resume some of the duties performed by the board and their meetings are open to the public. Meeting dates are posted at Norfolk Town Hall and published on the town's website @ www.virtualnorfolk.org.

Additional copies of this report are available upon request.

SUMMARY OF FINISHED WATER CHARACTERISTICS

These tables summarize parameters detected during 2005. However, some contaminants are not required to be sampled annually but if detected during the past five years, the detection must be reported.

Key to Tables

- ppm – Parts per million, corresponds to one penny in \$10,000
- ppb – Parts per billion, corresponds to one penny in \$10,000,000
- pCi/L – Picocuries per liter
- ND – Non-detect
- n/a - non applicable

SOME TERMS DEFINED

AL - (Action Level): *The concentration of a contaminant which, if exceeded, triggers a treatment or other requirement which a water system must follow.*

MCLG - (Maximum Contaminant Level Goal): *The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.*

MCL - (Maximum Contaminant Level): *The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.*

SMCL - (Secondary Maximum Contaminant Level): *These standards are developed to protect the aesthetic qualities of drinking water and are not health based.*

ORSG - (Massachusetts Office of Research and Standards Guideline): *This is the concentration of a chemical in drinking water, at or below which, adverse, non-cancer health effects are likely to occur after chronic (lifetime) exposure. If exceeded, it serves as an indicator of the potential need for further action.*

Total Coliform: *A bacteria that indicates other potentially harmful bacteria may be present.*

90th Percentile: *Represents the highest value found out of 90 percent of the samples taken in a representative group.*

<i>Regulated Contaminants</i>	Date(s) Collected	Highest Detect Value	Range Detected	MCL	MCLG	Violation	Possible Source of Contamination
Inorganic Contaminants							
Barium (ppb)	5/19/03	.004	n/a	2	2	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Nitrate (ppm)	8/25/06	2.5	1.9-2.3	10	10	No	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Radioactive Contaminants							
Gross Alpha Activity (pCi/L)	4/23/03	.05	-	15	0	No	Erosion of natural deposits
<i>Unregulated Contaminants</i>	Date(s) Collected	Highest Detect Value	Range Detected	Average Detected	SMCL	ORSG	Possible Source of Contamination
Inorganic Contaminants							
Sodium (Spruce Rd.) (ppm)	8/25/06	37	n/a	n/a	250	20	Road salting; erosion of natural deposits
Sodium (Gold St.) (ppm)	8/25/06	11	n/a	n/a	250	20	Road salting; erosion of natural deposits
Sodium (Strawberry Ln.) (ppm)	11/02/06	33	n/a	n/a	250	20	Road salting; erosion of natural deposits
Radioactive Contaminants							
Radon (pCi/L)	8/23/00		670-700		-	10,000	See description below

Sodium is a naturally-occurring common element found in soil and water. It is necessary for the normal functioning of regulating fluids in human systems. Some people, however, have difficulty regulating fluid volume as a result of several diseases, including congestive heart failure and hypertension. The guideline of 20 mg/L for sodium represents a level in water that physicians and sodium sensitive individuals should be aware of in cases where sodium exposures are being carefully controlled. For additional information, contact your health care provider, your local board of health or the Massachusetts Department of Public Health, Bureau of Environmental Health Assessment at 617-624-5757.

Radon is a radioactive gas that you cannot see, taste, or smell. It is found throughout the United States. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will be (in most cases) a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. Fix your home if the level of radon in your air is 4 Picocuries per liter of air (pCi/L) or higher. There are simple ways to fix a radon problem that aren't too costly. For additional information, call your State radon program or call EPA's Radon Hotline, 800.SOS.RADON.

Should Some People Take Special Precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

DISTRIBUTION SYSTEM WATER QUALITY

Microbial Results	Highest # Positive in a Month	MCL	MCLG	Violation	Possible Source of Contamination
Total Coliform Bacteria	3	1	0	Yes	Naturally present in the environment
Fecal Coliform or E.coli	0	*	0	No	Human and animal fecal waste

Total coliform are bacteria that are naturally present in the environment and are used to indicate that other potentially harmful bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.

*Compliance with the Fecal /E.coli MCL is determined upon all repeat testing

Violation: After completing our annual flushing program in the Fall of 2006, there were a number of total coliform detections in a small section of town and in each of the storage tanks. The NDPW Water Division worked with the MA DEP to resolve these issues quickly and in a timely manner. Immediately following a detection each tank was taken out of service and disinfected with sodium hypochlorite. In addition, sodium hypochlorite was injected at each of the wells to disinfect the distribution system. Samples were taken throughout town to insure that this detection was not widespread and isolated to one area of town. After closely monitoring the system over a two week period, the problem was resolved and further testing indicated an absence of total coliform bacteria. Since this incident, no other detections have occurred. In an effort to prevent this from happening again, the MA DEP has given the NDPW permission to add sodium hypochlorite prior to, during, and immediately following all bi-annual flushing operations.

Lead & Copper	Date(s) Collected	90th Percentile of Sample	Action Level	MCLG	# of Sites sampled	# of Sites Above Action Level	Violation	Possible Source of Contamination
Lead (ppb)	8/31/05-9/21/05	4	15	0	21	2	No	Corrosion of household plumbing systems
Copper (ppm)		0.5	1.3	1.3	21	0	No	Corrosion of household plumbing systems

Violation: We failed to complete required sampling in a timely manner, which is a monitoring and reporting violation. Because we did not take the required number of samples, we did not know whether the contaminants were present in your drinking water, and we are unable to tell you whether your health was at risk during that time. The contaminants for which monitoring was not done are listed in the table below with the period during which samples should have been taken, the number of samples each contaminant required, the number taken, and when the sampling was conducted. In addition to sampling for these contaminants, our system announced public notification upon awareness of the violation. However, subsequent samples taken after the required period for all contaminants below were within acceptable levels. Copies of these reports are available at the DPW office located at 33 Medway Branch Road. Steps have been taken and procedures put in place to prevent this from happening again.

Contaminant	Monitoring period	Number of samples required	Number of samples taken	Date Sampling Conducted	Health Effects
Nitrate	4/1/06 –6/30/06	2	0	8/25/06	Unknown
Volatile Organic Contaminants	4/1/06 –6/30/06	2	0	8/25/06	Unknown

Source Water Characteristics

The sources of drinking water in the United States (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production. These contaminants can also come from gasoline storage, urban storm water runoff, and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

SWAP (Source Water Assessment and Protection)

The Massachusetts DEP has prepared a Source Water Assessment Program (SWAP) Report for Norfolk DPW. The report assesses the susceptibility of public water supplies to contamination and makes recommendations. This report is available from WhiteWater, Inc. located at 253B Worcester Road, Charlton, MA, Norfolk DPW, Board of Health and also at the DEP website: www.state.ma.us/dep/brp/dws/.

A susceptibility ranking of **high** was assigned to both wells in our system by the DEP due to the absence of hydro-geologic barriers (i.e. clay). Both Spruce Rd. and Gold St. wells are gravel-packed and produce quality water due to their natural filtering ability. Both wells presently meet all US Environmental Protection Agency (EPA) and MA DEP drinking water quality standards.

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius (400 ft.) and a Zone II protection area. Zone I is owned and controlled by the Norfolk DPW and limited to only water supply activities. Zone II is defined as the primary recharge area for each well. To ensure wellhead protection, all construction plans in Norfolk are reviewed by the DPW with emphasis given to those in close proximity to Zone II.

In concert with its certified operator, WhiteWater, Inc., the Norfolk DPW is addressing the concerns as stated in the SWAP Report and welcomes your input to our planning. If you have any questions, please contact **Remo R. Vito Jr., Director NDPW at (508) 528-4990**.

Water System Improvements

The Water Division has located and determined three potential well sites in the Gold Street area for supplement and new sources. The department will be working over the next few years to first install a supplement well. This new source will give the Town of Norfolk and it's customers an additional source of water in case of an emergency. In the meantime, the department is working with their consulting engineer (Environmental Partners Group) and their contract operator (WhiteWater, Inc.) to develop a new permanent source at Gold Street. Once on line it will give the resident and customers of Norfolk the additional capacity and redundancy to ensure the delivery of clean portable water.

Spruce Road Well was taken out of service in November of 2006 to be completely rehabilitated. The well was cleaned and surged using methods currently used in general water system practices. The well was restored to approximately 75% of it's original capacity.

The Webber Tank, located behind Town Hall, will be taken out of service for a short period of time in FY '08 to be completely rehabilitated. The tank will be cleaned, repaired and repainted inside and out. This work was recommended by our tank inspector who checks both storage tanks bi-annually.

The DPW continues to conduct leak detection surveys every year to reduce unaccounted for water in the system and keep water leaks to a minimum. Over the past four years, leaks have been found totaling nearly 220 gallons per minute. This is approximately 100 million gallons of water saved over this four- year period. Our next survey is scheduled for the spring of 2007.

The water division completed a full round of system wide flushing in the fall of 2006. We are very confident that this program will greatly reduce dirty water complaints and improve water quality throughout the town.



Gold Street Pump Station and Well House

If you have any questions or need information regarding the treatment and distribution of our water, please contact the Norfolk Department of Public Works at 508-528-4990 or visit the Norfolk Town Website at www.virtualnorfolk.org.

FOR YOUR INFORMATION

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Where to go for more informationMassachusetts Department of Environmental Protection (DEP) 617-292-5885. www.state.ma.us/dep

What Do In Case Of An Emergency?

In case of an emergency during normal business hours of operation (7:00 AM to 3:30 PM), please contact the Norfolk DPW office at 508-528 4990. After hours please call the Norfolk Police Department dispatch at 508-528-3206, and one of our representatives will contact you immediately.